

**PHASE MODULATION POWER SPREADING USED TO REDUCE RF OR
MICROWAVE TRANSMITTER OUTPUT POWER SPUR LEVELS**

ABSTRACT OF THE DISCLOSURE

A two stage mixer is configured to reduce the power levels of out of band spurious output signals or spurs, such as the leakage from the second stage mixer by way of phase modulation power spreading. The local oscillator signal applied to first mixer stage is phase modulated while the local oscillator signal applied to the second mixer stage is inverse modulated. As such, a problematic spur, such as leakage from the local oscillator applied to the second mixer stage is spread so that the power levels of the spur are distributed a wider bandwidth instead of concentrating the power levels at single frequencies, thus reducing the power level at any single frequency. By utilizing phase modulation, the need for relatively complex and expensive filters is eliminated.